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Journal of Geography Science and Education 26 Vol. 4., No. 1, April 2022, pp. 26-31 ISSN 2685-5801, eISSN 2685-581X <http://journal.univetbantara.ac.id/index.php/jgse/index> doi :10.32585/jgse.v2i2.xxx jurnal.jgse@gmail.com The effect of e- learning on the levels of understanding at Universitas Veteran Bangun Nusantara Bayu Kurniaaji a,1,\* , MS Khabiburrahman b,2, Agus Sudargono c,3, Pranichayudha Rohsulina d,4 a Faculty of Teacher Training and Education, Universitas Veteran Bangun Nusantara, Sukoharjo, Indonesia b Faculty of Teacher Training and Education, Universitas Veteran Bangun Nusantara, Sukoharjo, Indonesia c Faculty of Teacher Training and Education, Universitas Veteran Bangun Nusantara, Sukoharjo, Indonesia d Faculty of Teacher Training and Education, Universitas Veteran Bangun Nusantara, Sukoharjo, Indonesia 1 Bayuajigeokra@gmail.com \* Corresponding Author Received 16 February 2022; accepted 2 Apr 2022; published 24 Apr 2022 ABSTRACT KEYWORDS This study aims to: (1) Find out the effect of e-learning on the geography education students' understanding. (2) Find out the effect of e-learning on the geography education students' understanding.

This study was One Group Pretest – Posttest Design. The effect of e-learning on the levels of understanding was measured using pretest and posttest which was continued with analyzing using t-test and statistical description. This study results: (1) There was an effect of e-learning on the geography education students' understanding in the hydrogeography material which showed with a p.value sig. (2-tailed) at 0.001 (lower than 0.05) and t-statistic value of 4.236 which is greater than t-critical value (4.236 > 1.796), (2).

Geography education students' levels of understanding after the use of e-learning increased as seen from statistical description which showed that 25% students (3 students) is partially understand and occurring misconception which is the rest of 75% (9

orang) students is partially understand without misconception e-learning hydrogeography **One Group Pretest – Posttest Design** This is an open- access article under the CC – BY-SA license 1. Introduction In this modern era, lecturers should be dynamic towards the rapic technological change.

Conventonal tchimets ned o ow tst opmentand ind difficult to follow tecnological development, whereas the use of technology it-self facilitates the lecturers to convey the material. Moreover, the use of technology helps students to be more ease to understand the lectures given. E-learning based media is one of the alternatives which can be used to constantly increase the learning quality because it takes advantage of the use of technology. Universitas Veteran Bangun Nusantara is a private university that have applied e-learning in the learning process, including in the geography education. Geography comes from geo and graphien which mean the earth and writing, respectively.

However many terms have developed according to texpertRid tshoneithe ta 1997;9)saithat aphy s hat discipline that seeks to describe and interpret the variable character from place to place of the earth astworlofman”Harshorwants o ize hattpls e ihave different characters, and the science of geography seeks to explain and interpret the character of the places on the earth's surface. Based on Permendiknas No. 22 of 2006 concerning **Standar Kompetensi dan Kompetensi Dasar** for High School Education, the objectives of Geography are as follows: a. Understand spatial, environmental and regional patterns and related processes, b.

Master basic skills in obtaining data and information, c. Communicate and applying geographic knowledge, d. Displaying a caring behavior towards the environment and utilizing natural resources wisely and having tolerance for the cultural diversity of the community. E-learning or electronic learning is a learning concept carried out through electronic media networks. The development of highly advanced technology in the modern era and globalization allows various activities to be carried out quickly and efficiently.

Technological developments have had a lot of influence on our way of life, one of which is in the field of education with the use of e-learning in **Journal of Geography Science and Education** 27 ISSN 2685-5801 (print) | 2685-581X (online) Vol. 4., No. 1, April 2022, pp. 26-31 Bayu Kurniaaji et al. (The effect of e-learnng nthGeohEuonstudts’ levels f nerstaninat Universitas Veteran Bangun Nusantara) learning activities in schools, colleges, course places and even communities - online communities have started to use this kind of concept.

Along with the development of information technology and the demands of the globalization of education and distance learning, various concepts have been developed to replace traditional learning methods, one of which is the concept of e-learning. E-learning can be used as an alternative to problems in the education sector, either as an addition, complement or substitute for existing learning activities. The use of e-learning at a university educational institution is needed to assist lecturers in improving the learning process. As is well known, lectures at universities have more theoretical and practical learning time than class planning in the classroom.

By utilizing e-learning as a learning medium, it can be used as a complement or a supplement to improve learning in the classroom so that it can help improve understanding of lecture material. Based on the aforementioned background, several problems can be identified as follows: Not yet known the effect of e-learning on the understanding of lecture material for Geography Education Study Program students of Universitas Veteran Bangun Nusantara Sukoharjo, the level of understanding of Geography Education Study Program students of Veteran Bangun Nusantara Sukoharjo University e-learning. 2. Method This study was conducted at the Universitas Veteran Bangun Nusantara Sukoharjo.

This study is quantitative research with One Group Pretest - Posttest Design. This type of research is used because in reality it is difficult to get a control group to use for research (Sugiyono, 2013). Data that is used in this study is in the form of data on the level of understanding of geography course material, especially in the Hydrogeology subject. The data collection techniques used were: 1. The documentation to obtain student name lists and photos of lecture activities. 2. Tests were carried to collect data about the learning outcomes of geography.

In this case, the test instrument used is in the form of mastery of Geography course material, especially in the hydrogeography subject. Analysis of the data used in this study was descriptive statistical methods and parametric inferential. Descriptive statistical analysis is used to describe or provide an overview of the data in the form of tables and graphs of the average value at the level of understanding of students' hydrogeographic material. Hypothesis testing in this study used t-test analysis with a significance level of 0.05. Before conducting the t-test, it is necessary to conduct a prerequisite test first with the normality test. 3. Results and Discussion 3.1.

The effect of e-learning on the geography students' of at Universitas Veteran Bangun Nusantara Sukoharjo. Table 1. Paired Sample Statistics students' understanding of hydrogeography material. Paired Samples Statistics Mean N Std. Deviation Std. Error Mean Pair 1 Pretest 843.333 12 257.023 .74196 Posttest 867.500 12 213.733 .61699 Table 1 shows that there is a

significant difference between the average of pretest and posttest scores. The average of pretest score before the use of e-learning is 84.33, whereas after the use of e-learning the average posttest score is 86.75. Thus an increase of score is 2.42. The difference between pretest and posttest showed that the use of e-learning increased the understanding of hydrogeography material.

During the use of e-learning students can utilize a variety of information and communication technology to access 28 ISSN 2685-5801 (print) | 2685-581X (online) Journal of Geography Science and Education Vol. 4., No. 1, April 2022 pp. 26-31 Bayu Kurniaaji et al. (The effect of e-learning on students' levels of understanding of hydrogeography material at Universitas Veteran Bangun Nusantara) Inimati astflie uident hing oce, t tcan er and ise sts'er and creaviy. Table 2. Paired Samples Correlations N Correlation Sig. Pair 1 Pretest & Posttest 12 .662 .019 Table 2 shows that there is a correlation between pretest and posttest because the p-value sig.

(2- paired) is lower than 0.05 ( $0.019 < 0.05$ ). It means that there was a correlation of data and variable of pretest and posttest. Table 3. Paired Sample T-Test of Understanding of Hydrogeography Material. Paired Samples Test Paired Differences t df Sig. (2-tailed) Mean Std. Deviation Std. Error Mean 95% Confidence Interval of the Difference Lower Upper Pair 1 Pretest - Posttest - 241.667 197.523 .57020 - 367.166 - 116.167 -4.238 11 .001 Table 3 shows that a p-value sig (2-paired) is lower than 0.05 ( $0.001 < 0.05$ ) and t-statistic value of 4.236 which is greater than t-critical value ( $4.236 > 1.796$ ) which means that there was an effect of e-learning on the students' understanding of hydrogeography material. The t-statistic value showed that pretest score is lower than posttest score.

This is because e-learning provides interactive tutorials so that it makes students feel more interested in the learning process. Based on the results of the study, the use of e-learning in geography is significantly better than without using e-learning. Because in the learning process, students do not just get monotonous things such as online classes, power point of materials, listening lectures so that they can understand the material more effectively and efficiently. During the learning process using e-learning, the lecturer tends to act as a facilitator, that is giving direction to students as needed.

The activeness of students as participants is emphasized in this learning, so that it will foster a high enthusiasm for learning and in the end student learning comes increase. At the beginning of learning process, students' conditioning in the online class experienced a few obstacles. Students are still confused because e-learning was still something new for them. But slowly the obstacles began to decrease because students began to interest to the e-learning during learning process.

Before the use of e-learning, students only depend on conventional learning and their independence has not been optimal, so the learning outcomes obtained are lower. This means that in this study students who get learning using e-learning get better learning outcomes than students who only get conventional learning. An increase in learning outcomes indicates that the application of e-learning in geography Irnican ncrudentunderandioft material being studied.

During learning, students can actively think, so that the learning Journal of Geography Science and Education 29 ISSN 2685-5801 (print) | 2685-581X (online) Vol. 4., No. 1, April 2022, pp. 26-31 Bayu Kurniaaji et al. (The effect of e-learning nthGeohEuonstudts' levels f nerstaninat Universitas Veteran Bangun Nusantara) systtooccurcafoستudents'ierestand iiiobtng earnng material. In the end, this condion camprts'earnng out. E-learning can be used as an option that can reduce student boredom and can stimulate geographic thinking skills so that students are interested in being active in understanding and solving problems related to the material being studied.

E-learning provides opportunities for learners to take control of their respective learning success, meaning that learners are given the freedom to determine when to start, when to finish, and which parts of the module they want to learn first. They can start from the topics or pages that interest them first, or they can just skip the parts that they think had been mastered. If they have difficulty understanding a passage, they could repeat it again until they understand. If, after repeating, there are still things that they do not understand, the learner can contact the lecturer via email or participate in interactive dialogues at certain times.

This independent learning method is more effective than other learning methods which force it to study in a predetermined order. Based on the study results, e-learning can be applied as a method for learning geography at the university level. E-learning is used to support conventional learning. This is because e-learning is web-based and applications that can be installed on Android or IOS so that it can be mobile. 3.2 G -learning Table 4. Levels of Understanding tingkat Deskripsi Pemahaman Konsep Kriteria penilaian 0 don't understand at all blank answers, answers in the form of repeating questions, answers that are irrelevant or unclear, do not provide an explanation for the answer choices 1 misconception wrong scientific answers, different concepts that are believed to be true, but actually contradict the concepts held by scientists 2 understand some and others there is a misconception the answers given show the correct understanding of the concept, but also contain misconceptions 3 understand partly without any misconceptions the answer contains part of the scientifically accepted concept 4 understand completely the answers contain understandings that are all correct The table

of the levels of concept understanding is used to assess how much the spread of understanding of the material for students in geography course material, especially in the hydrogeography material.

The use of this table is by matching students' answers to the assignments or tests that have been given with the criteria in the description of concept understanding. The number of students studied was 12 with the following results: 30 ISSN 2685-5801 (print) | 2685-581X (online) Journal of Geography Science and Education Vol. 4., No. 1, April 2022 pp. 26-31 Bayu Kurniaaji et al. (The effect of e-learning on students' levels of understanding) Universitas Veteran Bangun Nusantara) Table 5.

Levels of Understanding on the hydrogeography material

Level	Concept Understanding	Number of Students	Percentage
0	Fully not understand	0	0%
1	Misconception	0	0%
2	Partially understand with misconception	3	25%
3	Partially understand without misconception	9	75%
4	Fully understand	0	0%

Through the table of the level of understanding of the hydrogeography material can be shown that there are 5 descriptions that represent the levels of understanding. Table 5 shows that students that fully do not understand at all is 0%, occurring misconceptions is 0%, partially understand with misconception are 3 people with a percentage of 25 %, partially understand without misconceptions by 9 people with a percentage of 75% and 0% in the fully understand. This distribution shows that the levels of understanding of the material is influenced by the use of e-learning.

It can be seen in the 5 descriptions of the second and third levels which represent the most widely used level of student understanding. E-learning refers to using the web and applications to deliver a range of solutions that enhance knowledge and skills. In this lesson, the role of computers and smartphones is optimized as a means to display and engineer text, graphics, and sound in an integrated display. The use of information technology can train students to learn how to learn. In e-learning, there are many learning resources that can be explored by students. Learning resources are not only limited to learning resources owned by the lecturers.

This must also be supported by the ability of the lecturer in designing accessible learning resources to be combined with books, multimedia and other learning resources. The implementation of learning is also efficient in terms of time because the provision of independent material for students is allocated time for e-learning. Materials that is requiring special explanation are allocated at face-to-face time. Face-to-face learning is also used to reflect on learning between students and lecturers.

Students learn according to their respective learning styles and speeds under the

guidance of a lecturer who plays a role in encouraging and completing the whole series of the learning process. The application of e-learning tends to be educational research that leads to cognitive and psychomotor abilities. This quasi-experimental study has research limitations. The limitations of the existing research, among others, are that not all variables that influence E-learning learning are included in this study, for example the condition of the internet, the condition of computers and smartphones, intelligence level, interests, skills and so on. 4.

Conclusion Based on the results and discussion obtained from this study, it can be concluded that: (1) There was an effect of e-learning on students' levels of understanding in the hydrogeography material which showed with a p-value sig. (2-tailed) at 0.001 (lower than 0.05) and t-statistic value of 4.236 which is greater than t-critical value ( $4.236 > 1.796$ ), (2). Geography educators' understanding after the use of e-learning increased as seen from statistical description which showed that 25% students (3 students) is partially understand and occurring misconception which is the rest of 75% (9 orang) students is partially understand without misconception. *Journal of Geography Science and Education* 31 ISSN 2685-5801 (print) | 2685-581X (online) Vol. 4., No. 1, April 2022, pp. 26-31 Bayu Kurniaaji et al.

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